

REMARKS

Examiner H. Lee is thanked for the thorough examination and search of the subject Patent Application. Claims 1, 8, 15, and 20 been Amended. Claims 28-31, 34-35, and 37-40 have been or remain Canceled.

All Claims are believed to be in condition for Allowance, and that is so requested.

Reconsideration of the Specification objected to for failing to provide proper antecedent basis for claimed subject matter is requested based on Canceled Claims 24-25 and 39-40 and on the following remarks.

Applicant has canceled Claims 24-25 and 39-40. This should remove the objection to the Specification.

Reconsideration of the Specification objected to for failing to provide proper antecedent basis for claimed subject matter is requested based on Canceled Claims 24-25 and 39-40 and on the above remarks.

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Reconsideration of Claim 20 objected for informalities is requested based on Amended Claim 20 and on the following remarks.

Applicant has amended Claim 20 as requested by the Examiner.

Reconsideration of Claim 20 objected for informalities is requested based on Amended Claim 20 and on the above remarks.

Reconsideration of Claims 15-19 and 22 rejected under 35 U.S.C. 102(e) as being unpatentable over Lin (U.S. 6,426,556) is requested based on Amended Claim 15 and on the following remarks.

Applicant has amended Claim 15 to make clear that the mask of passivation does not comprise photoresist as shown by:

15. (Currently Amended) A method for forming a metal bump on a semiconductor substrate, comprising the steps of:

providing a semiconductor substrate, said semiconductor substrate having been provided on the surface thereof with a contact pad, said contact pad overlying a layer of dielectric,

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said layer of dielectric having been deposited over said semiconductor substrate; and

partially removing said contact pad in accordance with a mask of passivation material, said removing having a removal thickness and removal surface area wherein said mask of passivation is not photoresist.

Referring to Lin, Fig. 10 shows layer 37 overlying and masking the metal pad 28. However, layer 37 is a photoresist layer used for patterning the contact pad 28 - not a passivation layer as the Examiner has stated. This is clearly seen by Lin's description in Column 9, lines 4-54). As just one example, Lin states:

"Fig. 10 shows a cross section of the substrate after a layer 37 of **photoresist** has been deposited **over the surface of the layer 32 of passivation**. The layer 37 of photoresist has been patterned and developed, creating opening 31 in the layer 37 of photoresist. Opening 31 exposes the probe mark 28 in the surface of the aluminum." (col. 9, lines 4-10)

Several important features of Lin should be noted. First, layer 37 is photoresist and not passivation. Second, Lin is

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teaching etching down the metal pad 24 using the photoresist layer 37 as the mask and not the passivation layer 32.

By comparison, Applicant teaches, in the claimed invention, using a passivation layer 32 - not comprising photoresist - to mask the etching down of the metal pad 24. Amended Claim 15 makes the distinction between Applicant's claimed invention and the cited art very clear. Therefore, Applicant respectfully submits that the rejection of Claim 15 under 35 USC 102(e) should be removed. Further, Claims 16-19 and 22 represent patentably distinct, further limitations on Claim 15 and should be in condition for allowance.

Reconsideration of Claims 15-19 and 22 rejected under 35 U.S.C. 102(e) as being unpatentable over Lin (U.S. 6,426,556) is requested based on Amended Claim 15 and on the above remarks.

Reconsideration of Claims 1-14, 20, 21, 23, 26, 27, 32, 33, and 36 rejected under 35 U.S.C. 103(a) as being unpatentable over Lin (U.S. 6,426,556) in view of Chiang (US 2002/0086520), AAPA, and Mistry et al (US 6,077,726) is requested based on Amended Claims 1, 8, 15, and 20 and on the following remarks.

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Claims 1 and 8 have been similarly amended as Claim 15. In each case, the amendment specifies that the passivation layer is not photoresist. Amended Claims 1 and 8 therefore make clear the distinction between the teachings of Lin, where the photoresist layer 37 is used to mask etching of the metal pad 24, and the teachings of the claimed invention. In addition, Lin, Chiang, AAPA, and Mistry et al do not teach nor suggest, individually or in combination, using the passivation layer or using a polyimide layer as a mask for etching down the metal pad. Only Applicant's Claimed invention teaches this key feature. It would not, therefore, have been obvious to one skilled in the art at the time of the present invention to have derived the feature of using a passivation layer or using a polyimide layer as a mask for etching down the metal pad. Therefore, Applicant respectfully submits that Amended Claims 1, 8, and 15 should not be rejected under 35 USC 103(a). Further, Claims 2-7, 9-14, 20, 21, 23, 26, 27, 32, 33, and 36 represent patentably distinct, further limitations on Claims 1, 8, and 15 and should be in condition for allowance.

Reconsideration of Claims 1-14, 20, 21, 23, 26, 27, 32, 33, and 36 rejected under 35 U.S.C. 103(a) as being unpatentable over Lin (U.S. 6,426,556) in view of Chiang (US 2002/0086520),

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AAPA, and Mistry et al (US 6,077,726) is requested based on Amended Claims 1, 8, 15, and 20 and on the following remarks.

Reconsideration of Claims 24, 25, 39, and 40 rejected under 35 U.S.C. 103(a) as being unpatentable over Lin (U.S. 6,426,556) in view of Kung et al (US 6,197,613) is requested based on Canceled Claims 24, 25, 39, and 40.

Applicants have reviewed the prior art made of record and not relied upon and have discussed their impact on the present invention above.

Allowance of all Claims is requested.

It is requested that should the Examiner not find that the Claims are now Allowable that the Examiner call the undersigned at 989-894-4392 to overcome any problems preventing allowance.

Respectfully submitted,

A handwritten signature in black ink, appearing to be 'SBA', written over a horizontal line.

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